

## General

### Title

Metabolism and nutrition: percentage of patients with blood glucose greater than 150 mg/dL treated with insulin.

### Source(s)

Quality indicators in critically ill patients. Madrid (Spain): Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC); 2011. 185 p.

## Measure Domain

### Primary Measure Domain

Clinical Quality Measures: Process

### Secondary Measure Domain

Does not apply to this measure

## Brief Abstract

### Description

This measure is used to assess the percentage of patients with blood glucose greater than 150 mg/dL treated with insulin.

### Rationale

The aim of intensive care medicine is to provide critical patients with the healthcare that they need, ensuring the quality and safety of care. Intensive care medicine is one of the principal components of modern healthcare systems. There is an increasing demand for this resource, which involves high costs.

The quality of care has gradually come to be the central focus of healthcare, and in recent years patient safety has come to represent one of the key aspects of quality. In the case of intensive care medicine, this interest in quality is even more evident, not only because of its social and economic impact, but also because some of the dimensions involved in the quality of care of critical patients take on greater importance: critical patients are more vulnerable, access to critical care is more limited so efforts to

distribute resources equitably are more important, scant scientific evidence is available, and the efficiency is limited.

Hyperglycemia in critical patients is associated with increased morbimortality and infectious complications. Studies of strict control of glycemia using insulin infusion to maintain glucose levels between 80 and 110 mg/dL have found a high incidence of severe hypoglycemia and contradictory results concerning the effect of this treatment approach on mortality. Current evidence suggests that blood glucose levels should be maintained between 80 and 150 mg/dL with insulin therapy and that protocols aimed at strict glycemic control (80 to 110 mg/dL) should be avoided.

## Evidence for Rationale

NICE-SUGAR Study Investigators, Finfer S, Chittock DR, Su SY, Blair D, Foster D, Dhingra V, Bellomo R, Cook D, Dodek P, Henderson WR, Hebert PC, Heritier S, Heyland DK, McArthur C, McDonald E, Mitchell I, Myburgh JA, Norton R, Potter J, Robinson BG, Ronco JJ. Intensive versus conventional glucose control in critically ill patients. *N Engl J Med*. 2009 Mar 26;360(13):1283-97. [PubMed](#)

Preiser JC, Devos P, Ruiz-Santana S, Melot C, Annane D, Groeneveld J, Iapichino G, Leverve X, Nitenberg G, Singer P, Wernerman J, Joannidis M, Stecher A, Chiolero R. A prospective randomised multi-centre controlled trial on tight glucose control by intensive insulin therapy in adult intensive care units: the Glucontrol study. *Intensive Care Med*. 2009 Oct;35(10):1738-48. [PubMed](#)

Quality indicators in critically ill patients. Madrid (Spain): Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC); 2011. 185 p.

Van den Berghe G, Wilmer A, Hermans G, Meersseman W, Wouters PJ, Milants I, Van Wijngaerden E, Bobbaers H, Bouillon R. Intensive insulin therapy in the medical ICU. *N Engl J Med*. 2006 Feb 2;354(5):449-61. [PubMed](#)

Van den Berghe G, Wilmer A, Milants I, Wouters PJ, Bouckaert B, Bruyninckx F, Bouillon R, Schetz M. Intensive insulin therapy in mixed medical/surgical intensive care units: benefit versus harm. *Diabetes*. 2006 Nov;55(11):3151-9. [PubMed](#)

## Primary Health Components

Metabolism; nutrition; blood glucose control; insulin treatment

## Denominator Description

Number of patients with blood glucose greater than 150 mg/dL and indications for blood glucose control (see the related "Denominator Inclusions/Exclusions" field)

## Numerator Description

Number of patients with blood glucose greater than 150 mg/dL treated with insulin

## Evidence Supporting the Measure

## Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Additional Information Supporting Need for the Measure

Unspecified

## Extent of Measure Testing

Unspecified

## State of Use of the Measure

### State of Use

Current routine use

### Current Use

not defined yet

## Application of the Measure in its Current Use

### Measurement Setting

Hospital Inpatient

Intensive Care Units

### Professionals Involved in Delivery of Health Services

not defined yet

### Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

### Statement of Acceptable Minimum Sample Size

Unspecified

### Target Population Age

Age greater than or equal to 18 years

## Target Population Gender

Either male or female

# National Strategy for Quality Improvement in Health Care

## National Quality Strategy Aim

Better Care

## National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

# Institute of Medicine (IOM) National Health Care Quality Report Categories

## IOM Care Need

Getting Better

Living with Illness

## IOM Domain

Effectiveness

# Data Collection for the Measure

## Case Finding Period

Unspecified

## Denominator Sampling Frame

Patients associated with provider

## Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Therapeutic Intervention

## Denominator Time Window

not defined yet

## Denominator Inclusions/Exclusions

### Inclusions

Number of patients with blood glucose greater than 150 mg/dL and indications for blood glucose control

Note:

Patients with indications for blood glucose control:

Mechanical ventilation

Postoperative

Severe sepsis/septic shock

Multiple organ dysfunction syndrome

Artificial nutrition

Type I or type II diabetes

Population: All patients that require blood glucose control during the period reviewed.

### Exclusions

Unspecified

## Exclusions/Exceptions

not defined yet

## Numerator Inclusions/Exclusions

### Inclusions

Number of patients with blood glucose greater than 150 mg/dL treated with insulin

### Exclusions

Unspecified

## Numerator Search Strategy

Institutionalization

## Data Source

Electronic health/medical record

Paper medical record

## Type of Health State

Does not apply to this measure

## Instruments Used and/or Associated with the Measure

Unspecified

## Computation of the Measure

## Measure Specifies Disaggregation

Does not apply to this measure

## Scoring

Rate/Proportion

## Interpretation of Score

Desired value is a higher score

## Allowance for Patient or Population Factors

not defined yet

## Standard of Comparison

not defined yet

## Prescriptive Standard

Standard: 80%

## Evidence for Prescriptive Standard

Quality indicators in critically ill patients. Madrid (Spain): Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC); 2011. 185 p.

## Identifying Information

### Original Title

Maintaining appropriate blood glucose levels.

### Measure Collection Name

Quality Indicators in Critically Ill Patients

### Measure Set Name

Metabolism and Nutrition

### Submitter

Spanish Society of Intensive and Critical Care and Units Coronary - Clinical Specialty Collaboration

## Developer

Spanish Society of Intensive and Critical Care and Units Coronary - Clinical Specialty Collaboration

## Funding Source(s)

Boehringer Laboratories

## Composition of the Group that Developed the Measure

Work Group for Metabolism and Nutrition

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## Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

## Adaptation

This measure was not adapted from another source.

## Date of Most Current Version in NQMC

2011 Mar

## Measure Maintenance

Unspecified

## Date of Next Anticipated Revision

2016 Jul

## Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in May 2016.

## Measure Availability

Source available in [English](#)  and [Spanish](#)  from the Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC) Web site.

For more information, contact SEMICYUC at Paseo de la Reina Cristina, 36, 4<sup>o</sup> D, Madrid, Spain; Phone: +34-91-502-12-13; Fax: +34-91-502-12-14; Web site: [www.semicyuc.org](http://www.semicyuc.org) ; E-mail: [secretaria@semicyuc.org](mailto:secretaria@semicyuc.org).

## NQMC Status

This NQMC summary was completed by ECRI Institute on January 6, 2014. The information was verified by the measure developer on February 26, 2014.

The information was reaffirmed by the measure developer on May 10, 2016.

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## Production

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